

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF VIRGINIA  
Richmond Division  
GOLDEN BETHUNE-HILL, *et al.*,  
Plaintiffs,  
v. Civil Action No. 3:14-cv-852  
VIRGINIA STATE BOARD OF  
ELECTIONS, *et al.*,

TIME SHEET and OUT-OF-POCKET EXPENSES for Jonathan CERVAS, research assistant to the Bernard  
Grofman, Special Master

|            |               |             |       |   |                | CERVAS,<br>Jonathan,<br>TIME<br>SHEET as<br>Reseach<br>Assistant to<br>Bernard<br>Grofman in<br>Golden<br>Bethune-<br>Hill, 2018-<br>19--<br>working<br>under his<br>instructions |
|------------|---------------|-------------|-------|---|----------------|---|
| Date       | Start<br>Time | End<br>Time | Hours |   | Total<br>Hours | 417.75  |
| 20-<br>Oct | 1100a         | 4p          | 5     | Download shapefiles from VA redistricting site,<br>get shapefiles and other geographic files from US Census<br>, prepare data for redistricting               |                |   |
| 21-<br>Oct | 10a           | 5p          | 7     | Create a template from the current district configurations,<br>including identifying the 11 unconstitutional districts<br>and those directly adjacent to them |                |   |
| 22-<br>Oct | 12p           | 7p          | 7     | Create Plan Preliminary 1 which seeks<br>to minimize number of county splits<br>and keep all census places whole, where applicable                            |                |   |
| 23-<br>Oct | 11:00a        | 1230p       | 1.5   | Continue work on Preliminary Plan 1,<br>including equalizing populations and minimizing splits  |                |   |
|            | 350p          | 730p        | 3.6   | Counting current splits in 2011 plan, p<br>ercentages of districts in each county   |                |   |
|            | 900p          | 12a         | 3     | Continue calculating which counties are predominant in which districts  |                |   |
| 24-<br>Oct | 1015a         | 130p        | 3.25  | Making corrections to data from responses from Grofman  |                |   |
|            | 215p          | 7:15p       | 5     | Start working on "minimal changes" plan   |                |   |
|            | 930p          | 1220a       | 2.9   | Shifting population in the Norfolk/Chesapeake area to<br>minimize deviations to less than 1%  |                |   |
| 25-<br>Oct | 1000a         | 5:50p       | 8     | Minimal changes plan, work on districts 91-95   |                |   |
| 26-<br>Oct | 1030          | 600p        | 7.5   | Download District maps, clean up data, start creating county split data   |                |   |
| 27-<br>Oct | 11:30         | 700p        | 7.5   | Constructed distrists 63, 62 and 66 in minimal plan   |                |   |

|     |        |        |      |  |  |
|-----|--------|--------|------|--|--|
| 28- |        |        |      |  |  |
| Oct | 1230p  | 645p   | 7    | Work on plan comparison files so that we have a record of all plans submitted to the court that can be easily compared on multiple criterias.  |  |
| 29- |        |        |      |  |  |
| Oct | 11:15a | 7p     | 7.75 | Talk to Grofman to coordinate plans with Smith, calculate compactness of districts in tidewater area, continue to adjust populations in Newport News Hampton.  |  |
| 30- |        |        |      |  |  |
| Oct | 10:15a | 6p     | 7.75 | Disaggregated informtion about VAP by county and district.construct districts 27,68,73,72 of preliminary1a, talk to Grofman  |  |
| 31- |        |        |      |  |  |
| Oct | 1p     | 10:15p |      | ibid   |  |
| 1-  |        |        |      |  |  |
| Nov | 12:30p | 2p     | 1.5  | Talked to Grofman about what needs to be done, especially as it pertains to visualizing maps.  |  |
|     | 4p     | 6p     | 2    | Downloaded new data received via carrier from VA and began the process of importing and interpreting data.   |  |
|     | 1030p  | 12:30  | 2    | Spent time developling a visualization so all submitted maps s can be presented in the same way, so features of the plan can be interpretable.   |  |
| 2-  |        |        |      |  |  |
| Nov | 11a    | 3p     | 4    | Finished JC_Prelim_1 and began work on writing up report   |  |
| 3-  |        |        |      |  |  |
| Nov | 12a    | 130p   | 1.5  | Found "fracked" parts of unconstituional districts and wrote it up for Grofman   |  |
|     | 6:30p  | 8p     | 1.5  | Import Current plan into Tableau for interactive viewing of features for Grofman to get a better sense of the geography  |  |
| 4-  |        |        |      |  |  |
| Nov | 9:30a  | 1130   | 2    | continue building Tableau file for possible distribution and comparison of plans.  |  |
|     | 5p     | 730    | 2.5  | ibid   |  |
| 5-  |        |        |      |  |  |
| Nov | 11a    | 12p    | 1    | Import Democratic plan   |  |
|     | 9p     | 1130   | 2.5  | Attempting to figure out why there are discrepancies between shapefiles and documents. Phone conversation with Grofman about census block population being wrongly assigned reviewing court files, particularly NAACP submission to identify possible improvements |  |
| 6-  |        |        |      |  |  |
| Nov | 2p     | 6p     | 4    | Correcting data in mapitude  |  |
| 8-  |        |        |      |  |  |
| Nov | 12p    | 530    | 5.5  | Called Grofman to discuss progress, called Mapitude to get technical support on incorrect data   |  |
| 9-  |        |        |      |  |  |
| Nov | 1130a  | 6p     |      | Import submitted plans to summarize and compare  |  |

|     |        |       |      |   |
|-----|--------|-------|------|---|
|     | 1045p  | 1130p | 0.75 | Work on continuing to import plans for summary.   |
| 10- |        |       |      |   |
| Nov | 11a    | 12    | 1    | Enacted Plan import   |
|     | 330p   | 630   | 3    | ibid  |
| 11- |        |       |      |   |
| Nov | 11a    | 3p    |      | Summary Analysis of enacted plan  |
|     | 9p     | 12    | 3    | Continuing analysis of plans  |
| 12- |        |       |      |   |
| Nov | 11a    | 230   | 3.5  | Match district numbers in NAACP plan to enacted plan  |
|     | 4p     | 630p  | 2.5  | Create plan comparisons using corrected block file  |
|     | 10p    | 1115p | 1.25 | Created plan comparisons in a visually appealing way for ease of use.                                 |
|     | 10:15a | 1230p | 2.25 | Uploading data into files for visible comparisons   |
|     | 230p   | 7p    | 4.5  | Write Code for automated plan visualizations  |
|     | 1030p  | 1230a | 2    | Political Data into spreadsheets  |
| 14- |        |       |      |   |
| Nov | 10a    | 1230p | 2.5  | Verify data sources as accurate across plans  |
|     | 230p   | 5p    | 2.5  | Create R file for graphics  |
|     | 7p     | 1030p | 3.5  | Create Github summaries of plans  |
| 15- |        |       |      |   |
| Nov | 1030a  | 1230p | 2    | Map generation and plan updates   |
|     | 2p     | 930   | 7.5  | Meet with Grofman to discuss progress and additional data needs                                       |
|     | 10a    | 12    | 2    | County Split Reports for all plans  |
|     | 1p     | 2p    | 1    | ibid  |
|     | 3p     | 530   | 2.5  | ibid  |
| 18- |        |       |      |   |
| Nov | 3p     | 10p   | 7    | Split reports for Plaintiffs two plans and JC1  |
| 19- |        |       |      |   |
| Nov | 1p     | 6p    | 5    | Finished split reports and upload data  |
| 20- |        |       |      |   |
| Nov | 930a   | 1130a | 2    | Work on linking files for navigation and comparison   |
|     | 1230p  | 2p    | 1.5  | Phone call with Grofman clarifying county splits  |
|     | 3p     | 4:15p | 1.25 | Phone call with Grofman   |
|     | 10p    | 1215a | 2.25 | Continue to update web so that information flows  |
| 21- |        |       |      |   |
| Nov | 11a    | 115p  | 2.25 | Phone with Grofman looking at compactness measures  |
|     | 4p     | 6p    | 2    | On phone with Grofman instructed how to rework Richmond and Norfolk, JC1preB                          |
| 22- |        |       |      |   |
| Nov | 10a    | 1145a | 1.75 | Map Richmond with river and incumbents  |
|     | 5p     | 7p    | 2    | Create file for total districts in each county  |
|     | 1a     | 2a    | 1    | Continue above task.  |
| 23- |        |       |      |   |
| Nov | 1045a  | 1     | 2.25 | Talk with Grofman, found fracking in some plans, talked about not changing 21 since it's not adjacent |
|     | 3p     | 4:30p | 1.5  | continued with instruction from previous conversation with Grofman                                    |

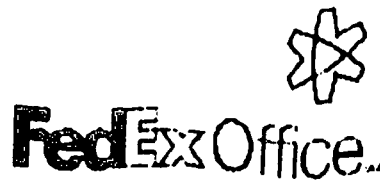
|     |       |       |      |       |  |
|-----|-------|-------|------|-------|--|
|     | 8p    | 1030p |      | 2.5   | On phone with Grofman discussing Smith plans   |
| 24- |       |       |      |       |  |
| Nov | 10a   | 11a   |      | 1     | Responded to BG's emails from the previous night.  |
|     | 130p  | 330p  |      | 2     | Work on getting Grofman cleaned up data on JC2   |
|     | 9p    | 11p   |      | 2     | Create Plan JC2_B3   |
| 25- |       |       |      |       |  |
| Nov | 10a   | 130p  |      | 3.5   | Talk with Grofman about Richmond and how to minimize impact of redistricting on adjacent districts |
|     | 430p  | 615p  |      | 1.75  | JC2_B6   |
|     | 1030p | 1230a |      | 2     | Complete JC2_B6 and upload data  |
| 26- |       |       |      |       |  |
| Nov | 1030a | 1215p |      | 1.75  | JC2_B4   |
|     | 145p  |       | 530  | 3.75  | JC2_B3iii  |
| 27- |       |       |      |       |  |
| Nov | 1115a | 415p  |      | 5     | Work on county split reports, talk to Grofman about incumbent protection, JCB3iv                   |
|     | 5p    | 9p    |      | 4     | More on splits and organizing data   |
|     | 1030p | 12a   |      | 1.5   | Final touches on data for Grofman's talk with the court  |
| 28- |       |       |      |       |  |
| Nov | 8a    | 830a  |      | 0.5   | Phone with Grofman before call with court  |
|     | 1020a | 1040a |      | 0.5   | Phone with Grofman after call with court   |
|     | 230p  | 630p  |      | 4     | Prepared Petersburg and Peninsula module plans   |
|     | 1045p |       | 1230 | 1.25  | On phone with Grofman about how to make modules compatible, JSPetersburg1 modularized              |
| 29- |       |       |      |       |  |
| Nov | 11a   | 1p    |      | 2     | Upload Peninsula modules   |
|     | 2p    | 945p  |      | 7.75  | Create Norfolk modules   |
| 30- |       |       |      |       |  |
| Nov | 1030a |       | 1    | 2.5   | Work on visualizations   |
|     | 1030p | 1115p |      | 0.75  | Create Richmond1i  |
| 2-  |       |       |      |       |  |
| Dec | 930p  | 145a  |      | 4.25  | Create Spreadsheets for comparisons of near final illustrative plans                               |
| 3-  |       |       |      |       |  |
| Dec | 10a   | 1130p |      | 13.5  | Create incumbents 2018 shapefile, Richmond Module, Petersburg Module, Crunch time tasks            |
| 4-  |       |       |      |       |  |
| Dec | 1030a | 230p  |      | 4     | Final Preparation of Maps and adjusting boundaries to accomodate 2018 incumbents                   |
|     | 315p  | 5p    |      | 1.75  | ibid   |
|     | 545p  | 2a    |      | 8.25  | ibid   |
| 5-  |       |       |      |       |  |
| Dec | 1230p | 115p  |      | 0.75  | ibid   |
|     | 2p    | 1215a |      | 10.25 | ibid   |
| 9-  |       |       |      |       |  |
| Dec | 900p  | 1145p |      | 2.75  | Prepare technical fixes in the shapefiles  |

|        |       |       |     |      |  |
|--------|-------|-------|-----|------|--|
| 10-Dec | 2p    |       | 345 | 1.75 | Review Special Master report for corrections   |
| 13-Dec | 230p  |       | 530 | 3    | Update data with corrections   |
| 14-Dec | 115a  | 2a    |     | 0.75 | Work on creating comparisons   |
| 15-Dec | 130   |       | 530 | 4    | Special master report updates with data attachments, start reviewing briefs to look for data questions after phone conversation with Grofman |
| 16-Dec | 1130p | 130a  |     | 2    | Reviewed Defendant-Intervenor's brief  |
| 17-Dec | 1015a | 115p  |     | 3    | Phone Call with Grofman  |
|        | 230p  | 3p    |     | 0.5  | Review Plaintiffs and NAACP briefs   |
| 18-Dec | 1215p | 430p  |     | 4.25 | Plan Population change   |
|        | 1045p | 1230a |     | 1.75 | Detailed District Differences Richmond1A   |
| 19-Dec | 1215p |       | 1   | 0.75 | ibid   |
|        | 2p    | 11p   |     | 9    | Work on SM21 and 26, talk with Grofman, compare BVAP gaps as per Princeton   |
| 20-Dec | 1146p | 3p    |     | 3.25 | ibid   |
|        | 5p    | 6p    |     | 1    | ibid   |
| 21-Dec | 2p    | 4p    |     |      | Corrected data for SM21 and SM26 for comparison purposes.  |
|        | 4:15p |       | 5   | 0.75 | ibid   |
|        | 10p   | 1215a |     | 2.25 | Final touches on comparisons of the 21 and 26 changed district plans   |
| 22-Dec | 8a    | 9a    |     | 1    | ibid   |
|        | 1030a | 1130a |     | 1    | ibid   |
|        | 230p  | 3p    |     | 0.5  | ibid   |
|        | 6p    | 715p  |     | 1.25 | Extract population percentages retained/removed from districts   |
| 23-Dec | 145p  | 445p  |     | 3    | Filled in Addendum 2 with data and corrections and extensions  |
|        | 1115p | 115a  |     | 2    | Talk on phone with Grofman, make sure party preferred plans match text   |
| 24-Dec | 1045a | 1230p |     | 1.75 | Update github data so Grofman has access to data for his report  |
| 26-Dec | 630p  | 230a  |     | 6    | Respond to BG's data questions   |
| 27-Dec | 12p   | 645p  |     | 6.75 | Work on NAACP plan clarifications  |
|        | 7p    | 145a  |     | 6.75 | final data issues on SM Addendum 2   |
|        | 8p    | 12a   |     | 4    | ibid   |

|     |       |        |      |   |
|-----|-------|--------|------|---|
| 4-  |       |        |      |   |
| Jan | 9a    | 10a    | 1    | Revisions on Addendum 3   |
|     | 1130a | 1245p  | 1.25 | ibid  |
| 5-  |       |        |      |   |
| Jan | 1115a | 12p    | 0.75 | Review new briefs from plaintiffs and naacp and make list of objections   |
|     | 430p  | 615p   | 1.75 | review new brief from DI and work on trying to incorporate critiques of illustrative maps                                   |
|     | 7p    | 10p    | 3    | Create Richmond modules to check if incorporating naacp suggs are doable  |
| 6-  |       |        |      |   |
| Jan | 330p  | 430p   | 1    | Answering Grofman's questions re DI Brief data assertions   |
|     | 5p    | 6p     | 1    | ibid  |
|     | 1030p | 12:30a | 2    | Sent Grofman comments on the DI re data issues  |
| 8-  |       |        |      |   |
| Jan | 1015a | 1115a  | 1    | additional discussion of DI objections to SM report   |
|     | 145p  | 315    | 1.5  | Create Richmond module with NAACP fixes   |
| 10- |       |        |      |   |
| Jan | 430   | 530    | 1    | Talked with Grofman about next steps per the court case and got direction about new materials needed                        |
|     | 6p    | 9      | 3    | Create new visuals for court ordered publication quality SM report  |
| 11- |       |        |      |   |
| Jan | 1p    | 4p     | 3    | Continue work on publication level maps   |
|     | 7:30p | 930p   | 2    | Worked on final report  |
| 13- |       |        |      |   |
| Jan | 915p  | 1130p  | 2.25 | Uploaded maps for Grofman's approval  |
| 14- |       |        |      |   |
| Jan | 6p    | 1115p  | 5.25 | Talked on Phone with Grofman and spend time creating module maps for the enacted and DI7002 and NAACP plans for comparisons |
| 15- |       |        |      |   |
| Jan | 11a   | 4p     | 5    | Investigate neighborhood splits in 94   |
|     | 7p    | 10p    | 3    | Matched data from new court order to our data.  |
| 16- |       |        |      |   |
| Jan | 10a   | 6p     |      | Coordinating BVAP with legislative staff to identify apparent errors in NAACP data submission                               |
|     | 930p  | 3a     | 5.5  | Conversation with Grofman, then generating new data tables for the Second Special Master report                             |
| 17- |       |        |      |   |
| Jan | 9a    | 12p    | 3    | Start by talking with Grofman about latest draft, then continue to add data to document                                     |
| 23- |       |        |      |   |
| Jan | 630a  | 930a   | 3    | Began by discussing court order 353 and created plan for technical corrections.   |
| 24- |       |        |      |   |
| Jan | 12p   | 2p     | 2    | Grofman phone call about updated VTDs and creating list of VTD splits and differences between 2010 and 2014                 |

|     |      |                    |                    |  |
|-----|------|--------------------|--------------------|--|
|     | 330p | 5p                 | 1.5                | ibid                                       |
| 25- |      |                    |                    |  |
| Jan | 10a  | 1215p              | 2.25               | Call to Grofman on VTDs                    |
| 4-  |      |                    |                    |  |
| Feb | 5pm  | 6p                 | 1                  | Court ordered corrections                  |
|     | 945p | 1015p              | 0.5                | Phone call with Grofman                    |
|     |      | <b>Total Hours</b> | <b>417.75</b>      |  |
|     |      | <b>BILL FOR</b>    |                    |  |
|     |      | <b>TIME</b>        | <b>\$31,331.25</b> |  |
|     |      |                    |                    |  |
|     |      |                    |                    | out of pocket expense for FEDEX of \$47.70 |
|     |      | <b>TOTAL</b>       | <b>\$31,378.95</b> |  |

FED-EX Receipt (paid \$47.40)



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